

The variations illustrated in FIGS. 37A through 39D can be advantageously utilized with top discharge systems for container bags. All are based on methods for holding the two lower plies 25 together at junctures that serve to force the contents of the bag gradually towards the region where the input for some top discharge means or dip tube will be located as the interply region 204 inflates. The two lower plies 25 can be mechanically held together as illustrated in FIG. 38. In this configuration, a dip tube 300 is provided at its input end 301 with an extension 301A terminating in a ring-shaped member 301B that is pressed downward against the two lower plies 25 to create the juncture 302 illustrated. Junctures 302 of numerous types can be mechanically created by utilizing shaped members that are held down by their own weight, are held down by pressing from above, hold the two lower plies 25 together by connectors fastened through both plies, are held down by connectors fastened through the bottom of the container, or are held down or together by other means. Alternatively, the two lower plies 25 can be bonded to each other using heat seals, adhesives, adhesive tapes, or other means to accomplish this purpose. However, no matter what method is used, such inflation guide junctures 302 will differ from the seals and bonds previously discussed in that they are not primarily intended to form borders and boundaries for an air-tight interply region to be filled. Instead, they act within such an interply region to guide the manner in which it inflates. Where the input is centrally located, such inflation guide junctures 302 will hold the two lower plies 25 together in a manner that encourages symmetrical filling of the lower interply region 204, beginning at the periphery of the bag 10, and moving gradually inward towards its center output or drain region as its contents are emptied.

One configuration for placement of such inflation guide junctures 302 when a top discharge method is being used to drain a bag from its center is illustrated in FIG. 37A. In this example, the inflation guide junctures 302 form a ring-like configuration. The inflation guide junctures 302 are centrally located in FIG. 37A and thereby define a depressed drain area or region (denoted generally in the drawing figures by arrow 303). In the configuration illustrated, air will enter the area surrounding drain area 303 at the bottom of bag 10 and initially work its way inward from the outside, eventually filling in the entire area exterior to drain area 303. The ring-like configuration illustrated in FIG. 37A is

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indicative of a general configuration type characterized by an exterior line surrounding an interior zone into which drain means such as a dip tube 300 with input end 301 can be inserted. This exterior line could be square, triangular, or polygonal. It can also be broken or intermittent such that its interior is not sealed off from the other portions of the bottom of the bag 10. It will still act to conserve and create an interior zone, or drain output 303, that will remain substantially depressed. The bag 10 will inflate from the outside towards this interior zone, causing the contents of the bag 10 to drain inward to output 303 for efficient removal.

On page 37, lines 4-16, please substitute the following paragraph:

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A bag is modified to include an air input port that allows inflation of an interply region of the bag. As the interply region inflates, an inner ply rises and becomes an advancing wall, raising the bulk material level in the bag and inclining the bottom of the bag, while pulling excess material away from a drain region of the bag. In another embodiment, the bag is made with half the initial number of layers folded in half to create the upper and lower plies and the non-fold edges are bonded. Where corner drain ports are used, the bag can be arranged so that an interlayer bond parallel to the fold is parallel to a diagonal of a tote in which the bag sits and so that the interlayer bond is opposite the drain port to enhance bag evacuation. An additional optional feature of the invention is the inclusion of an integral filling conduit or snout on the top of the bag, a mouth of which acts as a fill port to ease filling of the bag. Junctures can be created in the interply region to guide its inflation. The invention can also be applied to fitted bags.

In the Claims

Please substitute claims 1-4, 6, 7, 9, 10, 16-20, 22, 24, 27-29, 31, 37, 39, 42, 43, 45-49, 51-53, 55-58, 60, 65-67, and 69 for claims of the same number: